Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Review of the Commission's Rule	)	
Regarding the Pricing of Unbundled	)	
Network Elements and the	)	WC Docket No. 03-173
Resale of Service by Incumbent	)	
Local Exchange Carriers	)	

DECLARATION OF MATTHEW I. KAHAL ON BEHALF OF MCI

STATEMENT OF QUALIFICATIONS

My name is Matthew I. Kahal, and I am employed as an independent consulting economist specializing in regulatory economics and financial issues. My business address is 5565 Sterrett Place, Suite 310, Columbia, Maryland 21044.

I hold BA and MA degrees in Economics from the University of Maryland (College Park) and have completed all course work and qualifying examination requirements for the PhD degree from that institution. I held faculty positions at the University of Maryland and Montgomery College while pursuing graduate studies.

I have been engaged in regulatory and energy consulting on a continuous basis since 1977, and in 1981 I co-founded the consulting firm Exeter Associates, Inc. I served as a Principal at the firm from 1981 until my departure in 2001. During that period, I directed a number of large consulting and support contracts and took the lead role at the firm in a number of areas, including financial analysis, industry restructuring, cost of capital, utility merger assessments and environmental regulation. My consulting work has been on behalf of federal agencies, state regulatory commissions, state consumer advocacy offices, and private sector clients. I have testified or submitted testimony on more than 250 occasions before federal regulatory agencies, more than two-dozen state public service commissions, a Canadian province, and the U.S. Congress.

Since leaving Exeter as a Principal in 2001, I have continued my consulting work in several areas, most notably cost of capital, industry restructuring, environmental compliance, and

energy market analysis. My current and recent clients include the U.S. Department of Energy, U.S. Air Force, U.S. Department of Justice, the Connecticut Attorney General, state utility commissions (Rhode Island, Louisiana and Arkansas), state consumer advocacy offices (Pennsylvania and New Jersey), Maryland Department of Natural Resources, and MCI.

A. Introduction

Cost of capital is a key component of translating efficient network technology costs into unbundled network element (UNE) prices. It is important that a firm's cost of capital not be artificially understated or overstated, but instead accurately reflect capital market requirements. If a Regional Bell Holding Company's (RBOC) cost of capital is overstated, this will encourage a competitive local exchange carrier (CLEC) to build facilities, when leasing from the RBOC would be the more economic course of action. An overstated cost of capital may also constrain local retail phone competition, because the cost for a CLEC to build facilities may not be economically feasible given the price that customers are willing to pay for local phone service. On the other hand, an artificially understated cost of capital may discourage CLEC investment that otherwise would be economically justified. The FCC should be careful to not distort investment decisions by reaching conclusions in this docket that will overstate or understate cost of capital.

An estimation of cost of capital requires a determination of three basic factors: (1) mix of debt and equity, i.e., the capital structure; (2) cost of equity; (3) cost of debt. The TELRIC

NPRM seeks comment on the methods, models, and data sources that should be used in determining each of these components.

First, capital structure can play a very significant role in the determination of an appropriate cost of capital. The proper question to ask in determining an appropriate capital structure is, what mix of debt and equity would a cost-minimizing firm use to finance an investment in network facilities. Available evidence indicates that a realistic mix of capital for a cost-minimizing firm would be more similar to the current RBOC book-based capital structures than to a "market-based" capital structure. This declaration will show that the so-called "market-based" capital structure does not necessarily reflect the way incremental investment is actually financed by competitive firms.

Available evidence over an extended but recent time frame suggests that new investment for unregulated industrial corporations is funded with approximately 50 to 60 percent equity and the remainder debt. Because TELRIC requires a cost-minimizing mix of capital, equity funding portions as high as 75 or 80 percent clearly are inappropriate. Indeed, given the high cost of equity (including its income tax burden), the cost-minimizing firm will make considerable use of debt capital.

Second, cost of equity is typically the most contentious cost of capital issue because, unlike debt costs, the cost of equity cannot be directly observed. Instead, it must be estimated using an analytical model that requires input assumptions that are subject to dispute. This declaration advocates the use of a multistage discounted cash flow (DCF) model applied to a

proxy group of the major telecommunications holding companies, or in the alternative, to a broad group of unregulated industrial companies such as the S&P 400 or the Value Line Industrial Composite. A second, alternative model is the capital asset pricing model (CAPM), a model that the Commission recently employed in the Virginia Arbitration proceeding. The CAPM requires an estimate of the "equity risk premium," i.e., the expected return on the overall market minus the return on a risk-free asset, and available evidence supports a value no higher than 5.9 percent. (The use of long-term, after-the-fact returns on stocks versus bonds as the source of the risk premium is of questionable value.) Coupled with current long-term Treasury bond rates, this 5.9 percent equity risk premium would imply a cost of equity for an average-risk firm operating in a unregulated competitive market of about 11.1 percent.

The data and values presented in this declaration provide an illustration of an appropriate TELRIC-based cost of capital as of late 2003:

$$\text{Cost of capital} = (45\%)\,(5.27\%) + (55\%)\,(11.1\%) = 8.48\%^{[1]}$$

This 8.48 percent cost of capital assumes 55 percent equity financing of new investment, a cost of debt of 5.27 percent (based on BellSouth data), and an 11.1 percent cost of equity. This is consistent with cost of capital requirements today in competitive markets.

Third, cost of debt ideally should be market-based and reflect a reasonable mix of short term, intermediate, and long-term debt instruments. This declaration provides an example, using

[1] If one assumes a 40 percent marginal income tax rate, the pre-tax return would be 12.6 percent. This compares to 20.7 percent in the Virginia Arbitration proceeding.

data from BellSouth's latest annual report, showing a market value cost of debt of 5.27 percent and a more traditional embedded cost of debt of about 5.5 percent.

B. Capital Structure

The TELRIC NPRM asks how the cost of debt and cost of equity should be weighted; how states should determine the appropriate capital structure; and whether incremental investment is typically funded through debt or equity.[2]

It is conceivable that a firm could fund a given investment with either all debt or all equity. For example, a firm with surplus cash flow and an excessive debt balance may choose 100 percent equity financing for a given new investment. Similarly, a company that is over-capitalized with equity may choose to use 100 percent debt financing for an investment. Companies make such choices when they are in "disequilibrium," seeking to move over time toward a target capital structure. Companies' financing decisions in these circumstances do not have much relevance to identifying long-run incremental cost. The proper focus in this rulemaking is to identify a basis for a cost-effective long-run mix of debt and equity to fund network facilities investments. Since TELRIC is intended to reflect an efficient market, this mix must conform to principles of cost minimization.

Much of the debate over an appropriate capital structure has centered on the use of "market-based" versus "book-based" capital structures. Both measures look at total company data (rather than data for incremental investments) for the practical reason that total company data are readily available. The selection of a market-based versus book-based capital structure

[2] TELRIC NPRM ¶ 85.

has important implications for the determination of UNE rates. For example, in the Virginia Arbitration Order's discussion of rate of return, the Wireline Competition Bureau established a rate of return of 13.07 percent based on a 14.37 percent cost of equity, a 7.86 percent cost of debt, and an 80/20 market capital structure. Assuming a marginal combined federal/state income tax rate of 40 percent, the pre-tax cost of capital in this example is a stunning 20.7 percent:

$$\text{Pre-tax cost of capital} = (7.86)\ (20\%) + (14.37/0.6)\ (80\%) = 20.7\%$$

(The pre-tax cost of capital, not the after-tax, determines actual costs and UNE rates that wholesale customers pay.) Compare this to a book-based capital structure that is more characteristic of that of the RBOCs today, i.e., 55 percent equity and 45 percent debt:

$$\text{Pre-Tax cost of capital} = (7.86)\ (45\%) + (14.37/0.6)\ (55\%) = 16.7\%$$

The use of a market-based capital structure (i.e., 80/20) in this case increases the cost of capital by 400 basis points, or about 20 percent. Using the above figures and taking the income tax burden into account, the cost of equity is nearly 24 percent compared to a cost of debt of less than 8 percent -- a 300 percent difference.[3] Assuming the firm has the capacity to issue substantial amounts of debt on reasonable terms, it does not seem credible that a competitive, cost-minimizing firm would fund as little as 20 percent of its new investment with debt.

One would expect that a firm operating in a fully competitive market would not want to be burdened with an overly expensive capital structure and would seek to finance major new

[3] The 24 percent pre-tax cost is calculated as 14.37%/0.6, where 0.6 is 1.0 minus the income tax rate of 40 percent.

investments as inexpensively as possible. A consideration of "pre-tax coverage ratios" is a key determinant of the adequacy of a firm's capital structure and its credit rating. This ratio, defined as pre-tax income plus interest expense divided by interest expense, is an important measure of the safety margin that a firm has in meeting its ongoing debt interest obligations. In other words, this ratio measures the number of times a company's net income (before income taxes and interest expense) can "cover" its interest expense obligations.

Using data from 2002 income statements, I calculate the pre-tax coverage ratios for the RHCs to be 8.6x for SBC, 4.9x for BellSouth and 3.3x for Verizon. The most recent Value Line reports for these companies (October 5, 2003) report coverage ratios of 7.5x for SBC, 5.0 x for BellSouth and 5.1x for Verizon.[4] All three of these companies have favorable credit ratings, i.e., single A or double A. Value Line also reports a pre-tax interest coverage ratio for its Industrial Composite for 2002 of 5.6x.

The pre-tax coverage ratios of roughly 5 to 7x can be compared with the ratio implied by the Virginia Arbitration decision, which employs the overly expensive 80 percent equity capital structure:

Pre-tax ROR = 20.7% (See page 5 above)

Debt cost component = 7.86% x 20% = 1.57%

Pre-Tax Coverage = 20.7/1.57 = 13.2x.

The 80/20 capital structure produces an interest coverage of 13.2x, which is far greater than investors or credit rating agencies would require of a telecom company. The company

[4] This comparison excludes QWEST due to its current financial distress.

could move to a much less expensive capital structure and still retain a strong credit rating and access to capital.

As summarized in the introduction, a representative incremental cost of capital would be about 8.48 percent, and implies a pre-tax interest coverage ratio of 5.3x.

Pre-tax cost of capital = (5.27%) (45%) + (11.1%) (55%)/0.6 = 12.55%

Debt Cost Component = 2.37%

Pre-tax Coverage = 12.55/2.37 = 5.3x

This illustrates that an 80/20 capital structure is not needed to maintain access to capital markets on favorable terms, and a 55/45 ratio is quite sufficient.

However, a 300 percent discrepancy between the cost of equity and the cost of debt does not by itself prove that a book-based capital structure represents the cost-minimizing debt/equity mix for a firm's incremental investment in new facilities. We therefore must look at other evidence.

A useful benchmark to consider is the Value Line Industrial Composite, which represents unregulated U.S. companies.[5] Value Line develops this benchmark as:

> The Industrial Composite consists of 696 industrial, retail, and transportation companies. Financial data and stock market values have been pooled together as if they belong to one large conglomerate.

The Industrial Composite includes 75 of the 98 industry groups in Value Line's comprehensive survey, and excludes regulated utilities, financial services institutions, and non-North American

[5] See Value Line Investment Survey, Selection & Opinion, July 18, 2003, page 2857.

companies. The telecommunications industry, however, is included in the Industrial Composite. Although it excludes the financial services industry, the Industrial Composite is a very broad measure of the unregulated, publicly-traded U.S. economy, with the market capitalization for the Industrial Composite exceeding $6 trillion as of July 2003.

Value Line provides detailed, historical balance sheet data for its Industrial Composite, as well as five-year projections. This provides insight into how the U.S. corporate economy in recent years has actually financed new investment and how it is expected to do so in the future. Table 1 below provides historical data for 1998 to 2002:

Value Line Industrial Composite
(billions $)

	1998	2002	Change
Long-Term Debt	$ 739.0	$1,305.5	$ 566.5
Short-Term Debt	297.0	23.5	(61.5)
Preferred Stock	33.1	16.9	(16.2)
Common Equity	1,159.3	1,689.4	530.1
Total	**$2,228.4**	**$3,247.3**	**$1,018.9**

During this recent time period of 1998-2002, these industrial companies increased their total capitalization by over $1 trillion, with slightly less than half the increase coming from net increases in debt capital. Similarly, for the five-year time period 2002 to 2007, Value Line projects that capitalization for the Industrial Composite will increase by an additional $1.1

trillion,[6] with equity accounting for $614 billion, or about 58 percent, of the total increase. While this is only a rough indication, it suggests that unregulated industrial companies, in the aggregate, fund about 50 to 60 percent of their new investments with common equity. Debt clearly plays a major, and nearly equal, role in funding investment, as one would intuitively expect, given debt's relatively low cost and the tax advantage of interest expense deductions.

This analysis of the Industrial Composite also illustrates why the so-called market-based capital structure is irrelevant -- and even highly misleading -- for TELRIC purposes. Market equity (or "capitalization") is merely a company's stock price multiplied by the number of shares of stock outstanding. As of July 2003, Value Line reports a market equity value for its Industrial Composite of $6.03 trillion. Since stock prices have advanced since July, that figure is somewhat higher today. By comparison, debt outstanding for the Industrial Composite is only about $1.39 trillion, implying a "market" equity ratio of 81 percent ($6.03/($6.03 + $1.39) = 81%).[7] However, this market-based capital structure is largely driven by stock prices. This alone tells us very little about how companies in competitive markets raise capital to fund new investments, which is what TELRIC requires.. The Value Line data on the table above clearly tell us that competitive companies do not, on average, fund 81 percent of their new investments with equity dollars. Debt plays a far more prominent role, comprising almost half of the funding.

[6] Projections data omit short-term debt which is about 7 percent of the total. Thus, excluding short-term debt, Value Line projects capitalization increases from $2.98 trillion in 2002 to 4.05 trillion in 2007.
[7] Value Line and other financial publications do not normally publish the market value of a company's debt, but market and book value of debt are typically similar.

The changes over time (historical and prospective) in the capitalization data for the Industrial Composite provide a realistic depiction of the mix of debt and equity in financing incremental investment. This depiction should be consistent with the Commission's perspective on a TELRIC-based cost of capital because the Industrial Composite broadly represents unregulated companies operating in competitive markets and therefore exposed to competitive risks.[8]

Moreover, the data cited above cover an extended time period, 1998 to 2007, and therefore do not reflect temporary disequilibria of adjusting balance sheets to meet changing capital structure goals. In fact, it is reassuring to observe that the historical (1998-2002) mix of new capital and the Value Line projected mix are roughly similar. In short, the roughly 50 to 60 percent reliance on equity for the Industrial Composite is the best evidence available concerning how regulated corporations, on average and in the long run, finance new investment. The mechanical use of a market-based capital structure will reflect the cost-minimizing mix of financing incremental investment only by chance.

Market equity measures are also inappropriate for establishing a TELRIC-based cost of capital, because they can produce counterintuitive, and even perverse, results. Consider two publicly-traded firms in the same line of business, with the same book capital structures, the same bond ratings, and so forth. The TELRIC-based cost of capital for the two firms should be identical. However, stock prices depend on investor expectations of the firm's future profitability, and for any number of reasons, Firm A might have a much higher market/book ratio

[8] TELRIC NPRM ¶ 83.

than Firm B. All else being equal, the market-based capital structure method would conclude that Firm A's weighted cost of capital is far greater than Firm B, merely due to its higher market/book ratio. A firm not faring well in the stock market has a much thinner market equity ratio and therefore a lower (pre-tax) cost of capital. These stock market movements, which drive the market capital structure, tell us little about a firm's cost-minimizing mix of debt and equity funding for new network facilities.

C. The Cost of Equity

The cost of equity traditionally has been the most contentious cost of capital issue in regulatory proceedings. Unlike the cost of debt, the cost of equity cannot be directly observed, and cannot be precisely calculated. Instead, it must be estimated and inferred using analytical models. While these models have been widely used and understood by analysts and regulators, they nevertheless require assumptions about inputs and the exercise of judgment in certain areas. The final results that the model produces are sensitive to these assumptions.

My declaration supports the use of two models for establishing the cost of equity, which should be familar to the Commission from prior proceedings -- the discounted cash flow (DCF) and the capital asset pricing model (CAPM). There are a number of variations of the DCF, with the most appropriate one at this time being the three-stage model.

Both the DCF and CAPM models use capital market data for publicly-traded corporations. Since there is no such thing as a publicly-traded, "pure play" UNE provider, it is necessary to employ a "proxy" group of publicly-traded firms. The TELRIC NRPM states that,

"a TELRIC-based cost of capital should reflect the risk of a competitive market."[9] It is therefore necessary to select a market proxy group of publicly traded firms that reflects a competitive environment. However, the TELRIC NPRM does not describe this hypothetical competitive market in any detail. The TELRIC NPRM only refers to "facilities-based competition" in which "TELRIC prices should reflect the risk of losing customers to other facilities-based carriers."[10] It is difficult to evaluate in detail the risk-characteristics of a market that does not exist, other than to posit in a very general way the presence of a competitive environment. In this regard, it is important to note that the Commission's Triennial Review Order has placed limitations on network unbundling.[11] The "next generation networks" that deploy advanced technology and new services (whose demand is more uncertain) are not required to be unbundled and thus are not part of TELRIC pricing. Advanced technology and services represent, on average, riskier investments than the network as a whole, due to both the large costs involved and the uncertainty of customer demand for emerging new services. The exclusion of the next-generation network capabilities from the unbundling requirements and TELRIC pricing should thus reduce risk and lower the cost of capital compared to what it otherwise would be.

In light of the above, the Commission should consider using two proxy groups in the model. The first proxy group should consist of telephone holding companies that provide

[9] NRPM, Para. 83.
[10] TELRIC NPRM ¶ 83.
[11] Triennial Review Order, , ¶ 272. The Commission stated, "although we require the unbundling of legacy technology used over hybrid loops, we decline to attach unbundling requirements to the next-generation network capabilities of fiber-based local loops, i.e., those loops that make use of fiber optic cables and electronic or optical equipment capable of supporting truly broadband transmission capabilities based on the analysis described earlier in this subsection."

facilities-based local exchange service, and the second should include a broad-based group of unregulated companies such as the S&P 400 or the Value Line Industrial Composite, i.e., firms that generally operate in unregulated markets and face a range of competitive risks. The first group would consist of BellSouth Corporation, Verizon, SBC, and Alltel.[12] The business risks facing these companies reflect both their local exchange operations, in which they have held a dominant position, and their rapidly growing competitive operations such as internet and wireless. Market stock price data, of course, reflect the business risks that investors expect for these companies in the future. Because of the growing competitive risks faced by these companies and expectations of increased future competition, these telephone holding companies provide a reasonable risk-proxy for determining a TELRIC-based cost of capital.

The "betas" for these companies recently published by Value Line on October 3, 2003 illustrate this point in the chart below. A beta measures a company's overall investment risk relative to the stock market. A beta of 1.0 would indicate that a company is average in investment risk (relative to stocks in general), whereas a company with a beta less than 1.0 (such as utility companies) would be below average in risk.

[12] Companies not paying dividends must be excluded from this list since the DCF model cannot be applied to such companies. Another company that could qualify is Century Telephone although its dividend yield is only about 1 percent.

Company	Beta
Alltel	0.90
BellSouth	0.90
SBC	1.00
Verizon	1.00
Average	0.95

The group average beta is 0.95, which is very close to the value of 1.00 -- the overall stock market beta. By comparison, Value Line betas for regulated utilities (electric, gas, water) are much lower, typically in the range of 0.65 to 0.75. The current betas for the RHCs listed above clearly demonstrate that telephone holding companies are today viewed by investors as having risk profiles similar to competitive, unregulated companies and are no longer viewed as traditional "utilities." Hence, the holding companies can today serve as reasonable proxies for TELRIC cost of capital purposes.

I next discuss the models themselves.

(1) <u>The Multi-Stage DCF Model</u>.

The DCF model, which should be well-known to regulators, posits that the investor-expected return (and therefore cost of equity) is the sum of the current dividend yield (i.e., annualized dividend divided by stock price) plus the expected long-run growth in dividends. The dividend yield can be directly observed, but the long-run growth rate expected by investors cannot be observed and therefore must be estimated.

A common technique to estimate the long-run growth rate is to employ securities analyst earnings forecasts (including surveys of such forecasts) as a proxy for the long-run expected dividend growth rate. The shortcoming of this approach is that the published earnings growth rates typically extend for five years, whereas the DCF model requires a long-run sustainable growth rate. For a large proxy group of relatively stable companies (e.g., traditional utility companies), this may be a reasonable practice. However, more generally, the five-year forecast may not realistically reflect long-term growth expectations. For example, five-year growth rates for a group of unregulated companies could be on the order of 10 to 12 percent annually. While this may be plausible for a period of five years, this rapid growth is not plausible for an indefinitely long period of time, since the earnings of these companies would become an ever-increasing portion of the U.S. economy. In other words, earnings growth cannot outstrip U.S. Gross Domestic Product growth indefinitely, and investors are aware of this dilemma.

The appropriate solution to this problem is a multistage DCF model, in which the published five-year growth rates are just that -- applicable only to the first five years. After the initial five years, the growth rate converges to a long-run sustainable value, such as the overall growth rate of the U.S. economy.

In recent years, a multistage version of the DCF model has been employed by the Federal Energy Regulatory Commission (FERC) for gas pipeline companies (or market proxies). Unlike traditional electric utilities, gas pipeline companies are typically subsidiaries or divisions of diversified energy companies with disparate growth policies. FERC has developed a

"composite" growth rate as a weighted average of the five years earnings growth rate (as projected by securities analysts) and the long-run growth rate in nominal GDP. This method places a two-thirds weight on near term growth and one-third weight on long term growth.[13]

While the FERC's method properly recognizes that in many instances a five-year growth rate is not sustainable in the long run, there are more sophisticated versions of the multi-stage model that may account for this issue. The three-stage version in recent years has received widespread recognition among practitioners. This model uses the published projected growth rates in the first stage and the growth rate of the U.S. economy in the third stage. In order to avoid an abrupt growth rate change, a second stage (or "transition stage") is inserted that assumes a growth rate between the initial five-year growth rate and the steady state terminal growth rate. The length of the second stage is a matter of judgment, but a period of five to ten years would appear to be reasonable.

Long-run growth estimates for the U.S. economy are available from a variety of sources, both governmental and private. A particularly useful source is Blue Chip Economic Indicators, which twice per year publishes a survey of long-run economic forecasts prepared by major forecast organizations. The October 2003 edition lists long-term nominal GDP growth rate of 5.3 to 5.4 percent.

The three-stage model is more complex than the FERC two-stage model (which derives a single weighted average composite growth rate), but can be applied without undue difficulty.

[13] Opinion No. 414-A, Transcontinental Gas Pipe Line Corporation, Docket Nos. RP95-197-032 et al., July 29, 1998. 84 FERC ¶61,084.

The stream of growth rates over a long period of time for each of the three stages is identified, along with an initial stock price and dividend, and the stream of cash flows is solved using a standard internal rate of return algorithm.

2. Capital Asset Pricing Model (CAPM)

The CAPM estimates the cost of capital by specifying an "equity risk premium" (i.e., the additional return compensation that an investor requires for holding equity instead of a risk free asset), and that premium is multiplied by a beta statistic. The beta measures a stock's historic price or return movements relative to contemporaneous movements in the overall stock market, and therefore, the risk that cannot be eliminated by investors through portfolio diversification. This beta-modified premium is then added to the current return on a "risk free" asset (e.g., a Treasury bond yield) to measure that firm's cost of equity.

There can be disagreements over all model inputs, but the beta and risk free asset yield are directly observable. However, if the proxy group selected is a broad industry group, such as the S&P 500 or the Value Line Industrial Composite, then the value of beta will equal or be very close to 1.0. In other words, in using this standard, a TELRIC-based cost of equity will be that of the overall equity market. The controversy, then, surrounds the determination of the overall stock market equity risk premium.

There are two methods commonly used to make this determination. First, the overall stock market cost of equity can be calculated using a DCF-type calculation. The risk premium is then derived by subtracting the current yield on the risk-free asset. The second commonly used

method is the historical approach, i.e., over a long time period, the average annual return on the risk free asset is subtracted from the average annual return on the overall stock market. The historical risk premia have been calculated and presented for various time periods extending back to 1926 (Ibbotson) and the 19th century (Siegel).[14] The advantage of the historic risk premium approach is its transparency and simplicity. The published figures are readily available and updated annually by Ibbotson.

It is difficult to see what value is added by using a DCF analysis to derive the risk premium. In other words, once the stock market rate of return is derived using a DCF study, the cost of equity study (applicable to TELRIC) is complete, and the CAPM analysis at that point is superfluous. The real controversy, of course, lies with the DCF calculation itself.

The historic returns approach is simple but potentially very misleading. For example, the stock market equity risk premium (based on arithmetic returns) extending back to 1926 is approximately 7.0 percent. As Siegel has demonstrated, differing time periods would provide differing (often lower) equity risk premium values. A number of academic studies have questioned the validity of using the historic approach, arguing that the true risk premium is far lower than simple historical averages would indicate. Being a long-run historic average, the observed historic premium cannot -- by definition -- account for factors present today that did not prevail in the past. One key factor present today that has significantly reduced equity investor return requirements compared to past years is federal tax policy. Taxes on both capital

[14] Jeremy J. Siegel, Stocks for the Long Run, 2nd edition, 1998, McGraw Hill. Ibbotson Associates, Stocks, Bonds, Bills and Inflation: 2002 Yearbook.

gains and dividends recently have been sharply reduced, increasing the attractiveness of equities compared to fixed income assets (e.g., Treasury bonds).

Further reason for doubting the very high premium based on historical returns data is that the historic equity returns embody an overall upward movement in the price/earnings (P/E) ratio of stocks. Some analysts believe this trend must reverse over time with P/E's reverting to historic values. Others accept current P/Es as reflective of investor expectations but understand that stock price values in the future will reflect growth in earnings, not further secular increases in P/Es. In other words, generally investors do not factor in a continuation of the historic P/E growth trend into the future. It seems clear that rising P/E's over time have distorted the historic risk premium as a measure of today's risk premium.

This theme has been explored in detail in a recent paper by Ibbotson and Chen, long time advocates for the use of historical risk premia for cost of capital purposes.[15] Ibbotson and Chen note that, historically (from 1926-2000), stock market valuation growth has outstripped that of the U.S. economy only because of increases in P/Es. Over that 75-year time period, P/E ratios increased by a cumulative factor of 2.54. Going forward, the authors argue, the stock market values must be based on corporate productivity (i.e., earnings), not further sustained P/E increases:

> The supply of stock market returns is generated by the productivity of the corporations in the real economy. Over the long run, the equity return should be close to the long run supply estimate. In other words, investors should not expect a much higher or a much lower

[15] Roger G. Ibbotson and Peng Chen, "Stock Market Returns in the Long Run: Participating in the Real Economy," July 9, 2002, Forthcoming in Financial Analysts Journal.

return than that produced by the companies in the real economy. (page 11) (NEED CITE)

The authors then develop an equity risk premium using a supply side model that relies on the 75 years of historic data but excludes further increases in P/E ratios. This is a neutral assumption (consistent with DCF financial theory) but differs from the more pessimistic view of many analysts who believe P/Es must revert toward historic means. Using this approach, the authors obtain a geometric mean equity risk premium of 3.97 percent and an arithmetic mean equity risk premium of 5.90 percent.

The Ibbotson/Chen results can be used to obtain a cost of equity estimate potentially applicable to TELRIC. According to the Federal Reserve Statistical Release on October 27, 2003, the yield on long-term Treasury bonds as of September 2003 was 5.23 percent. Thus, the stock market cost of equity is 9.2 percent using the geometric mean value (i.e., 3.97% + 5.23%) and 11.1 percent using the arithmetic mean value (i.e., 5.90% + 5.23%).

D. The Cost of Debt

The cost of debt is the least controversial of the three cost of capital components because, as a general matter, it is directly observable. The cost of debt should reflect competitive market conditions and be the "current" or incremental cost of debt. In calculating the cost of debt, it is important to recognize that the debt instruments used to finance new investment should not be restricted to very long-term issues. Focusing on only long-term issues, such as the conveniently available Moody's Industrial Bond Yields, will lead to an overstatement of the cost of debt --

possibly a significant overstatement. The RBOCs use a wide variety of debt instruments, many of which are not publicly traded, including both fixed rate and variable rate debt obligations. For the RBOCs, short-term debt ranges from about 10 to 25 percent of total debt and typically has a much lower cost rate than long-term debt. There is no reason to assume that all debt financing for new network facilities would be long-term debt, with no short or intermediate debt as part of the mix.

The table below illustrates a calculation of the cost of debt for BellSouth, reflecting both its regulated local service and competitive operations. (The calculation excludes foreign debt issues.) The table shows a snapshot of BellSouth's overall cost of debt, derived from the its SEC Form 10-K Annual Report on December 31, 2002, on both a book basis and on a market basis. On a traditional "embedded" basis, the cost of debt is 5.53 percent. However, the annual report provides an estimate of the fair value of the debt based on dealer quotes on BellSouth's outstanding long-term debt. The fair value is slightly higher -- $18.3 billion versus a recorded amount of $17.4 billion, producing a slightly lower market cost of debt. The overall cost of debt based on fair value in this example is 5.27 percent.

For TELRIC purposes, it is conceptually preferable to calculate the cost of debt based on fair value, and doing so provides a more accurate measure of the "snapshot" market cost of debt at year-end 2002. However, as a practical matter, the difference between the embedded and fair value measures is relatively small. The method used in the table below should be used for all

telecommunications companies (or their holding companies) that provide UNE services and should exclude outstanding issues of foreign debt.

BellSouth Cost of Debt
at 12/31/02
(millions $)

Maturity Year	Balance	Interest Rate	Interest Expense
2003			
Fixed	$3,740	4.65%	$173.9
Variable	1,375	2.24	30.8
2004			
Fixed	204	6.73	13.7
Variable	331	4.50	14.9
2005			
Fixed	389	9.58	37.3
Variable	442	3.18	14.1
2006			
Fixed	1,006	5.08	51.1
Variable	1,115	2.34	26.1
Post 2006	8,795	6.83	600.7
Total Book	**$17,397**	**5.53%**	**$962.6**
Total Fair Value	**$18,259**	**5.27%**	**$962.6**

Source: BellSouth Corporation SEC Form 10-K for year ending 12/31/2, page 40.

E. Other Issues

The NPRM poses other cost of capital questions, including whether the cost of capital should vary by state and/or company and whether the cost of capital should vary by UNE. Although there should not be large cost of capital differences across states and companies, state commissions have considerable experience and expertise in setting cost of capital and are in the best position to take into account any local or company-specific factors that can influence the cost of capital. Hence, there is no compelling reason to impose "one size fits all" determinations concerning cost of capital.

With respect to whether a cost of capital should be set on a UNE-by-UNE basis, it would appear to be conceptually valid to permit the cost of capital to vary by UNE. However, doing so may not be practical. The competitive risks that the Commission suggests should be included in the TELRIC cost of capital are mostly hypothetical. Attempting to identify and quantify differences in cost of capital for each UNE would be an overly speculative exercise. Moreover, such differences could be a disguised form of price discrimination (which is incompatible with TELRIC) or an attempt to obtain a one-sided increase (or decrease) in rate of return. Consequently, if UNE-specific costs of capital are to be permitted, it should take place only by "deaveraging" an appropriate overall cost of capital for all UNEs. In other words, if there is a positive premium for one UNE, there must be an offsetting reduction for another UNE.

F. Conclusion

This concludes my declaration.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on December 16, 2003.

Matthew I. Kahal